

CLAIMS:

1. A transmitting device for transmitting a digital information signal via a transmission medium, including:

- input means for receiving the digital information signal,
- adaptive prediction filter means adapted to derive a prediction signal from the digital information signal in dependence on an array of prediction filter coefficients,
- first signal combination means for combining the digital information signal and said prediction signal so as to obtain a residual signal,
- encoding means for encoding said residual signal so as to obtain an encoded signal,
- coefficient generator means for generating an array of filter coefficients $A[i]$ in response to the digital information signal, i being an integer for which it holds that $0 \leq i < p$, where p is a variable,
- output means for supplying the encoded signal to an output terminal for transmission via a transmission medium, characterized in that the device further comprises
- smoothing means for smoothing the array of filter coefficients $A[i]$ so as to obtain the array of prediction filter coefficients for supply to the adaptive prediction filter means.

2. A transmitting device as claimed in claim 1, characterized in that the smoothing means comprises low-pass filtering means for low-pass filtering the coefficients so as to obtain the coefficient signal.

3. A transmitting device as claimed in claim 2, characterized in that the low-pass filtering means are in the form of a FIR filter.

4. A transmitting device as claimed in claim 2, characterized in that the low-pass filtering means are in the form of an IIR filter.

5. A transmitting device as claimed in claim 2, characterized in that the filtering means is adapted to perform the following equations to obtain the coefficients:

$$C_{out}[0] = C_{in}[0],$$

$C_{out}[i] = 0.25 * C_{in}[i+1] + 0.5 * C_{in}[i] + 0.25 * C_{out}[i-1]$, whereby i is an integer and $1 \leq i \leq n-2$,

$C_{out}[n-1] = C_{in}[n-1]$,

$C_{in}[x]$ being coefficient number x before smoothing. $C_{out}[x]$ being coefficient number x after smoothing.

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6. A transmitting device as claimed in any one of the preceding claims, in the form of an arrangement for writing the encoded signal on a record carrier.

7. A method of transmitting a digital information signal via a transmission

10 medium, comprising the steps of

- receiving the digital information signal,

- deriving a prediction signal from the digital information signal in dependence on an array of prediction filter coefficients,

15 - combining the digital information signal and said prediction signal so as to obtain a residual signal,

- encoding said residual signal so as to obtain an encoded signal,

- generating an array of filter coefficients $A[i]$ in response to the digital information signal, i being an integer for which it holds that $0 \leq i < p$, where p is a variable,

- supplying the encoded signal to an output terminal for transmission via a transmission

20 medium, characterized in that the method further comprises the step of

- smoothing the array of filter coefficients $A[i]$ so as to obtain the array of prediction filter coefficients.

8. A receiver for receiving a transmission signal and generating a digital

25 information signal therefrom, the receiver comprising:

- receiving means for receiving the transmission signal and retrieving an encoded signal therefrom,

- decoding means for decoding the encoded signal so as to obtain a residual signal,

- adaptive prediction filter means adapted to derive a prediction signal from the digital

30 information signal in dependence on an array of prediction filter coefficients,

- signal combination means for combining the residual signal and the prediction signal so as to obtain the digital information signal,

- coefficient generator means for generating an array of filter coefficients $A[i]$ in response to the digital information signal, i being an integer for which it holds that $0 \leq i < p$, where p is a variable, characterized in that the receiving device further comprises
 - smoothing means for smoothing the array of filter coefficients $A[i]$ so as to obtain the array
- 5 of prediction filter coefficients for supply to the adaptive prediction filter means.